

Assessment of the Pseudo Geostationary Lightning Mapper Products at the Spring Program and Summer Experiment

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Since 2010, the de facto Geostationary Lightning Mapper (GLM) demonstration product has been the Pseudo-Geostationary Lightning Mapper (PGLM) product suite. Originally prepared for the Hazardous Weather Testbed's Spring Program (specifically the Experimental Warning Program) when only four ground-based lightning mapping arrays were available, the effort now spans collaborations with several institutions and eight collaborative networks. For 2013, NASA's Short-term Prediction Research and Transition (SPoRT) Center and NOAA's National Severe Storms Laboratory have worked to collaborate with each network to obtain data in real-time. This has gone into producing the SPoRT variant of the PGLM that was demonstrated in AWIPS II for the 2013 Spring Program. Alongside the PGLM products, the SPoRT / Meteorological Development Laboratory's total lightning tracking tool also was evaluated to assess not just another visualization of future GLM data but how to best extract more information while in the operational environment. Specifically, this tool addressed the leading request by forecasters during evaluations; provide a time series trend of total lightning in real-time.

In addition to the Spring Program, SPoRT is providing the PGLM "mosaic" to the Aviation Weather Center (AWC) and Storm Prediction Center. This is the same as what is used at the Hazardous Weather Testbed, but combines all available networks into one display for use at the national centers. This year, the mosaic was evaluated during the AWC's Summer Experiment. An important distinction between this and the Spring Program is that the Summer Experiment focuses on the national center perspective and not at the local forecast office level. Specifically, the Summer Experiment focuses on aviation needs and concerns and brings together operational forecaster, developers, and FAA representatives.

This presentation will focus on the evaluation of SPoRT's pseudo-GLM products in these separate test beds. The emphasis will be on how future GLM observations can support operations at both the local and national scale and how the PGLM was used in combination with other lightning data sets. Evaluations for the PGLM were quite favorable with forecasters appreciating the high temporal resolution, the ability to look for rapid increases in lightning activity ahead of severe weather, as well as situational awareness for where convection is firing and for flight routing.